



6th Annual Environmental and Regulatory Issues Conference & Exposition

“The Greening of California Businesses”



Plating Shop Project

Waste Minimization for Platers and Metal Finishers

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11/9/07

DEH-HAZARDOUS MATERIALS DIVISION



Compliance Approach

How Do Companies Get Motivated to Comply?

- Enforcement
- Costs of Non-Compliance
- Public Pressure
- Customer Pressure
- Competitive Pressure





Compliance Approach

Why Is Compliance So Difficult ?

- Costs Can Be High
 - Economy Can Be Low !
- Technology Barrier
- Lots of Paperwork
 - Does Paperwork Earn Any Income?
- Mostly Negative Motivation





Compliance Approach

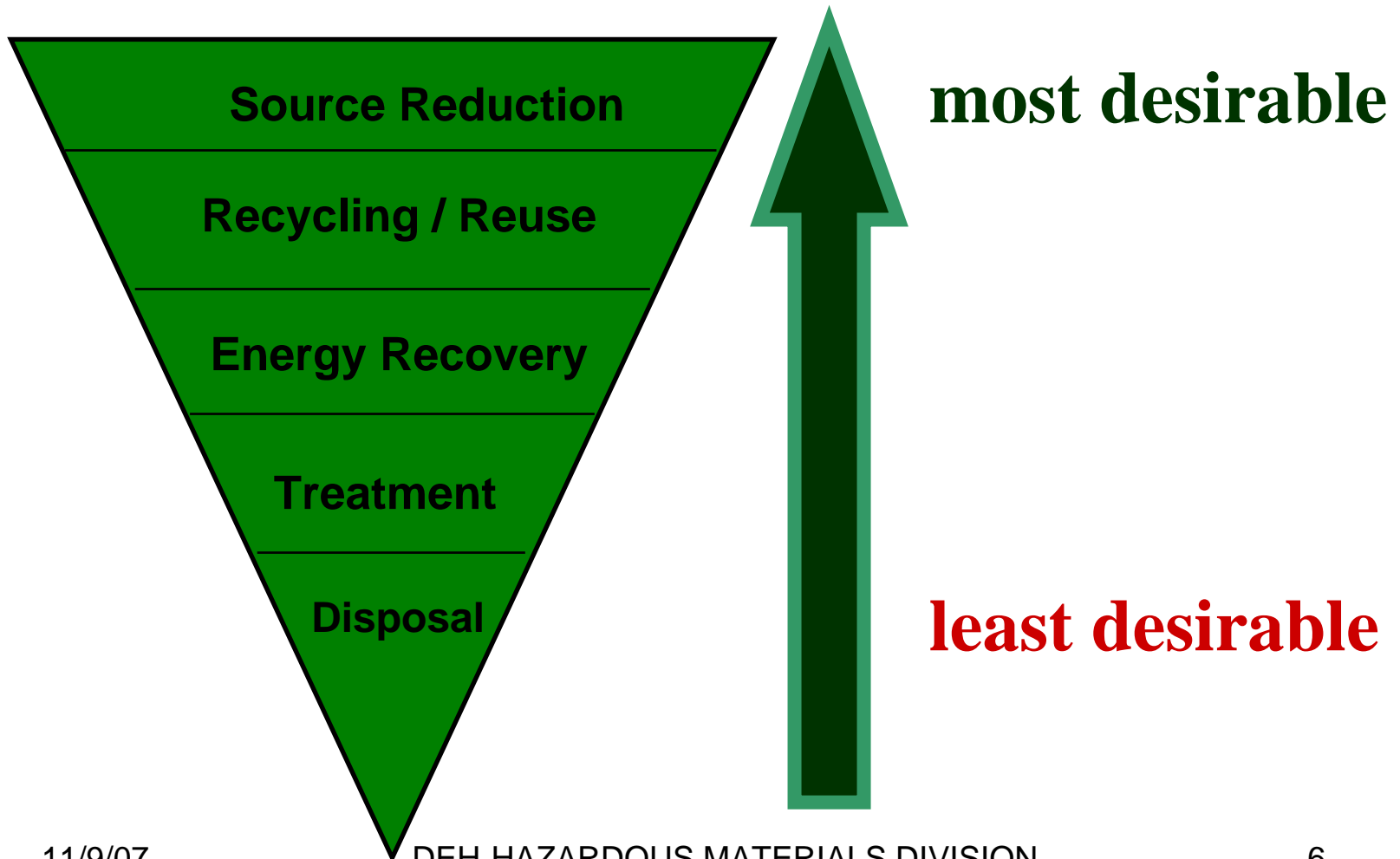
What Is the Best Approach to Compliance ?

- Traditionally
 - Treat – Discharge – Dispose
 - A Cost of Doing Business
 - Not a Main Part of the Business
- More Sensible Approach
 - P2 First !
 - Lower Costs (Ultimately)
 - Lower Liability
 - Better Compliance
 - More and Better Sleep!





In the Pollution Prevention World Waste Management Hierarchy



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Pollution Prevention (P2) is

- Source reduction
Reducing waste at the source is
the most effective form of
Environmental Protection
- To plan a project so no waste is
generated; no waste to dispose
- Eliminates risk of spill, harm to
employees and environment





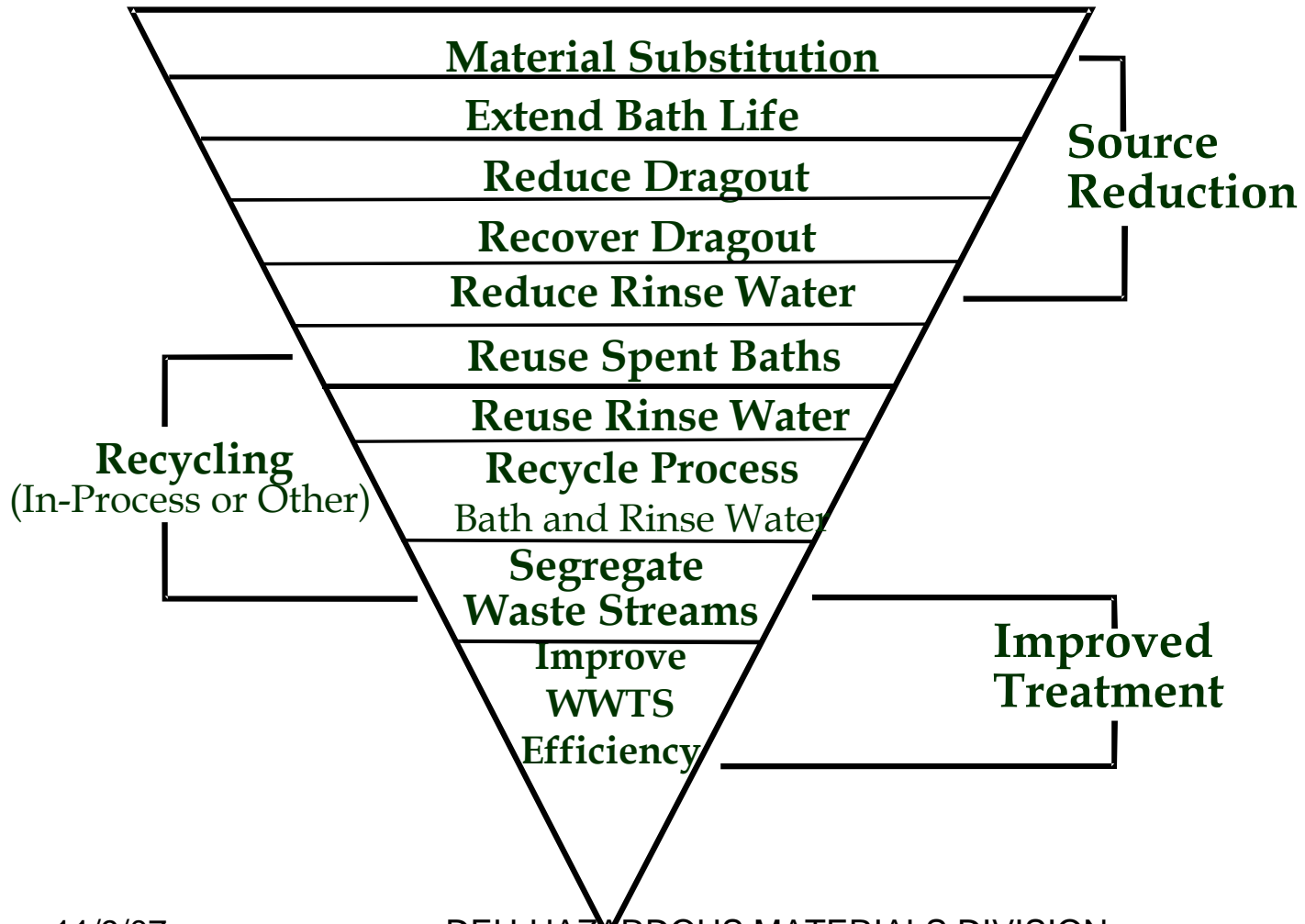
Pollution Prevention & Waste Minimization includes:

- Using materials efficiently
- Preventing spills
- Preventing material and product loss
- Conserving Water and Energy



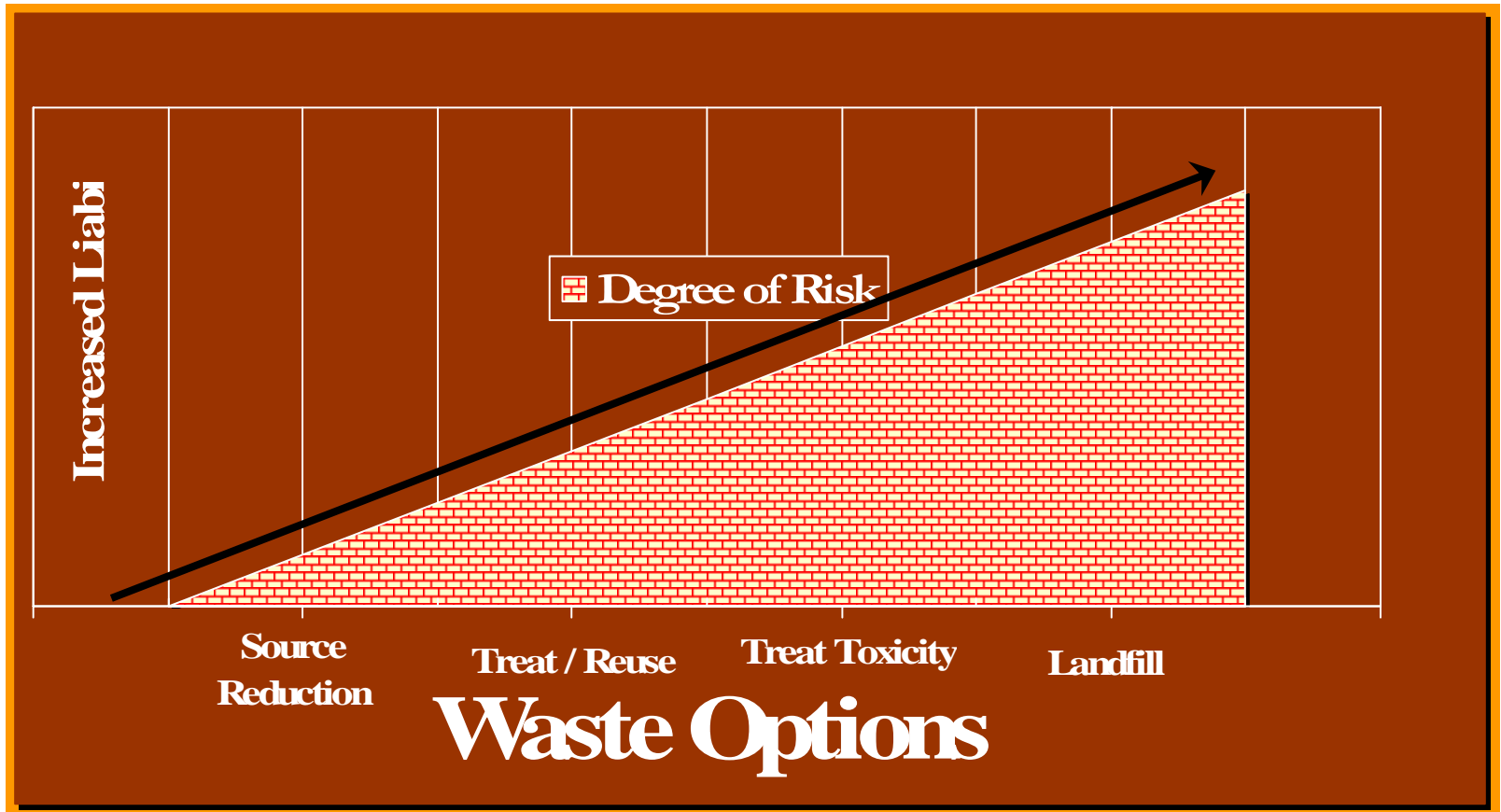


P2 Hierarchy for Metal Finishing





Liability Increases with Disposal





Bath Life Extension

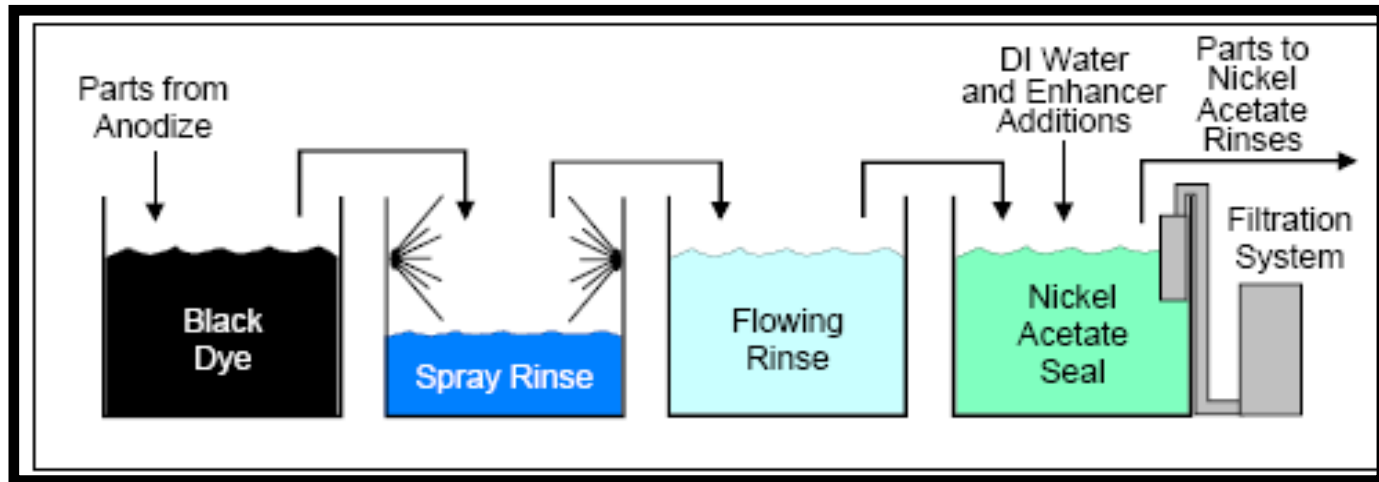
- Extend thru process control
 - Use deionized water
 - Measure pH, temp and concentration daily
 - Add chemicals only when needed
 - Filter bath continuously
 - Use bath additive or “enhancer”





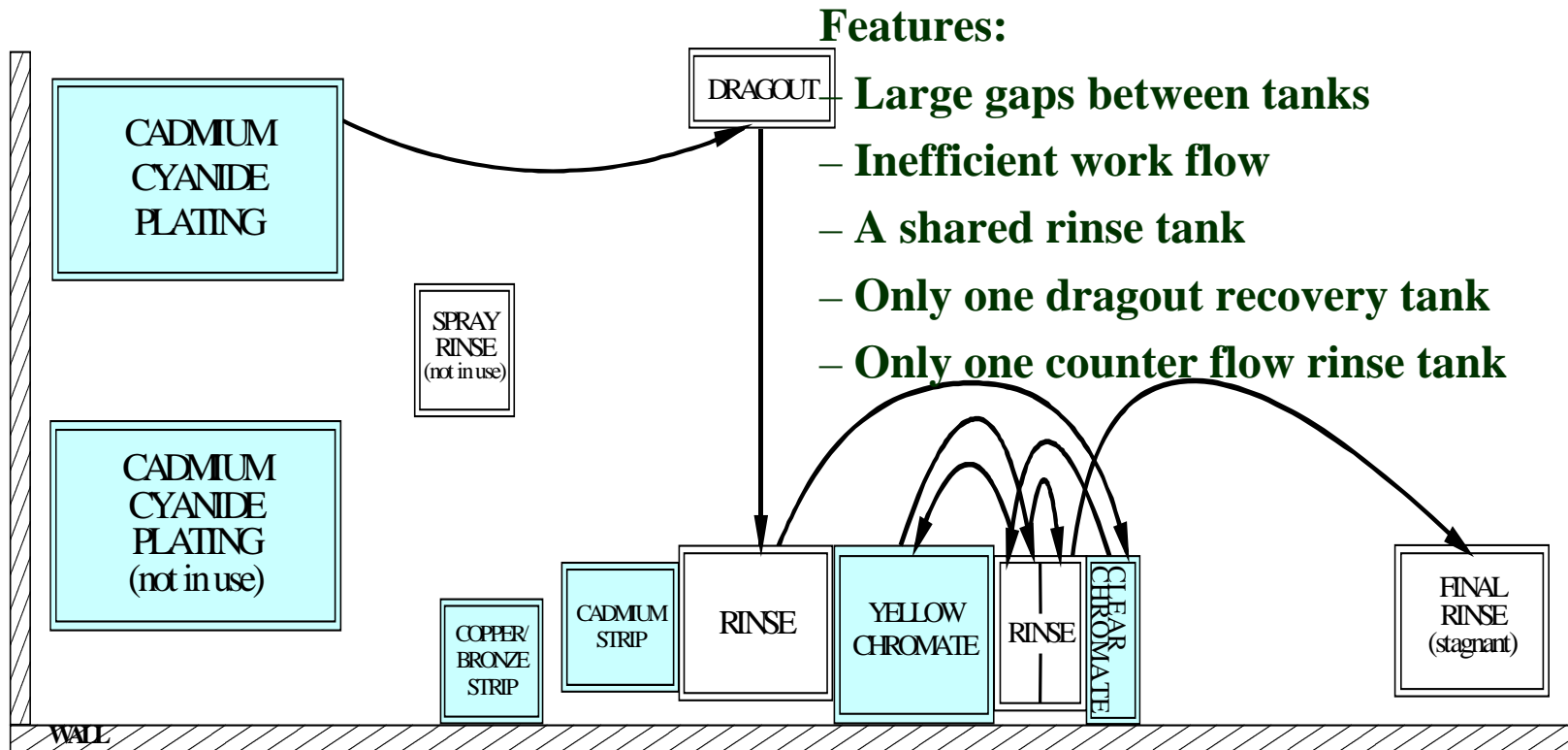
Bath Life Extension

- Bath contamination reduction techniques
 - Increase draining time
 - Modify rack position
 - Add more rinses or spray system





Tank Layout - Before



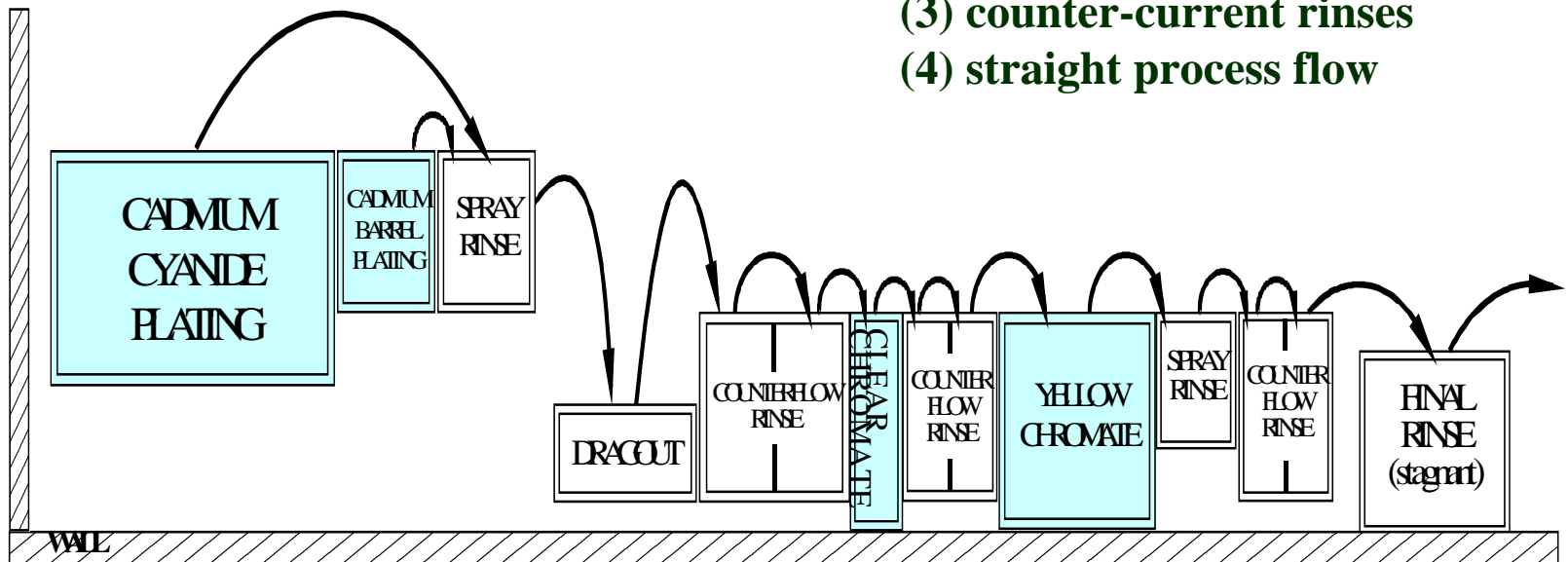


Tank Layout - After



Features:

- (1) spray rinses
- (2) dragout tanks,
- (3) counter-current rinses
- (4) straight process flow





Pollution Prevention is a Continual Improvement Tool

To achieve mutual goals of:

- Environmental Quality
and
- Economic Vitality





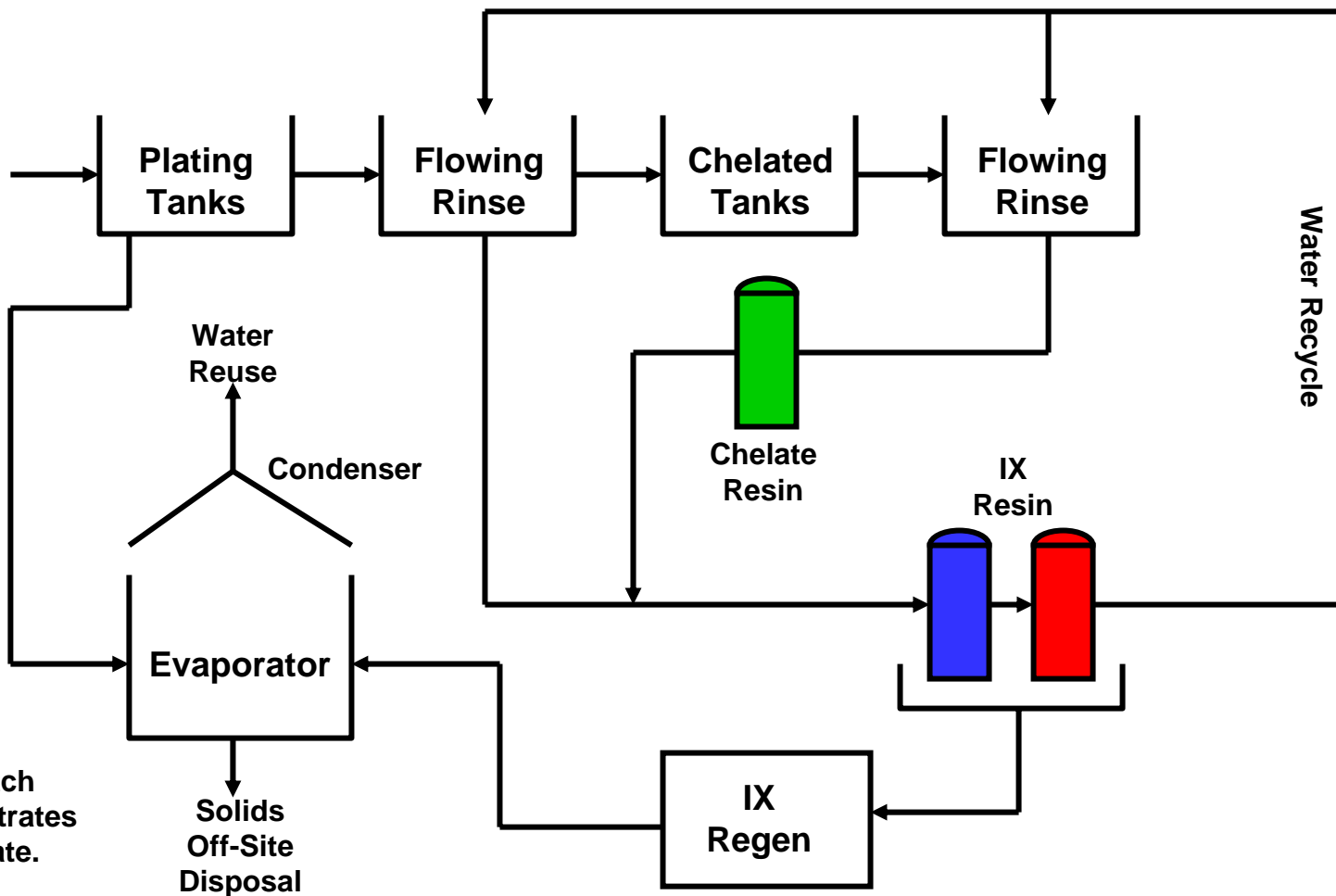
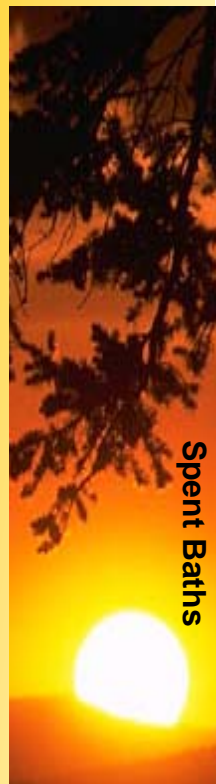
How to get started?

- MAKE A COMMITMENT
- Put together a PLAN with costs
- Involve all Employees
- Review waste streams
 - Largest?
 - Most toxic?
 - Costs the most?
- Revise Operations
 - Start microscale to ensure applicability





Zero-Discharge Shop An Example



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And sometimes it takes looking at the same thing differently...

**LIKE
PUTTING
ON
A NEW
PAIR OF
GLASSES**



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Local Resources

- **San Diego County CUPA website**

<http://www.sdcounty.ca.gov/deh/hmd/index.html>

- **Pollution Prevention**

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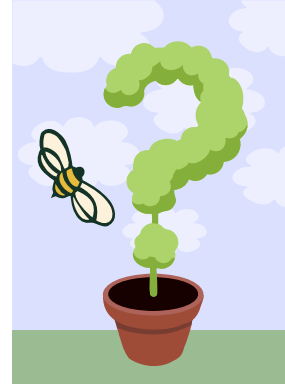
- **Compliance assistance M-F; 8am-5pm**

Hazardous Materials Duty Desk

(619) 338-2231



The End of P2



NEXT

**Please Complete POST-TEST
& Course Evaluation**

**Turn them in to obtain your
Certificate of Attendance!**